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ABSTRACT

This study explored sex differences in the Future Temporal Perspectives (FTP) of children. The influences of age, social class and intelligence were also investigated, or FTP was generally believed to be affected by them. Subjects were 96 boys and 96 girls, selected from 26 schools in Nova Scotia, from three age groups: 9.6-11.0, 12.0-13.6, and 15.0-17.0 years. Sex was found to be a fundamental component in the formation of FTP, influencing it more basically than social class membership or intellectual level. Early sex labeling plus widely-held sex biases influence later development of self concepts which, in turn, are important in the formation of FTP. It is suggested that FTP be studied as a useful tool in cross-cultural research, and also in the assessment of social change. (PFS)

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SEX AND AGE DIFFERENCES IN FUTURE TEMPORAL PERSPECTIVE

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ABSTRACT

Future temporal perspective (FTP) was defined as "the capacity of the subject to extend his thinking with temporal references and temporal orientation into the future" (Grant, 1966), and a psychophysical method was employed to measure it. The time lines of Cohen, Hansel and Sylvester (1954) were adapted to represent future time units of a day, a week, a month, a year, and a life span, upon which the time of occurrence of appropriate future events, some of which were identical with, or similar to, those devised by Wallace (1956) and others, could be projected.

For scoring purposes the future was conceived as consisting of a 'near future' (period before an event) and a 'distant future' (period after an event), FTP implying an ability to think of future events without distorting by bringing them nearer the present, this happening when more of the future is represented as 'near future' than should objectively be included. In accordance with this conception of the future, the scoring method consisted of deriving the error of a subjective judgment by comparing it with an objective measure of the time of occurrence of the future event, a negative error (subjective measure greater than objective measure) indicating narrow FTP, and a positive error (subjective measure less than objective measure) indicating wide FTP.

Subjects were 96 boys and 96 girls, selected to meet the requirements of three previously defined age levels, two socio-economic levels, and two levels of intelligence. Based on previous research, directional hypotheses were stated concerning sex differences, age differences, and class differences, and although no directional predictions were made, it was hypothesized that intellectual level would differentiate between groups.

Analysis of the data for the total sample supplied ample evidence for confirmation of Hypothesis I, pertaining to sex differences; boys were indeed found to have wider FTPs than girls. Also, older Ss were found to have wider FTPs than younger Ss, confirming Hypothesis II. The two additional hypotheses, concerning class and IQ differences, were not confirmed. Information gathered at the time of testing indicated that 'realizability', a factor shown by Klineberg (1967) to be an important determinant of FTP, differed for one group of boys because of deviant goals so that differences based on intellectual level were confounded. To determine the effects of intelligence on FTP it would be necessary to control for this factor by choosing Ss of similar goals. It also became evident that 'realizability' differed for another group of boys because of IQ level, so that differences in FTP between social class levels were confounded. To determine the effects of class differences, it would be necessary to control for intelligence.

Kohlberg's (1966) cognitive developmental theory of sex role concepts was found well suited to the interpretation of sex differences in FTP, for the factors controlling these concepts also controlled FTP. Thus widest sex differences in FTP appeared where sex typing was strongest - at young age levels, among average as compared with superior IQ children, and among working class rather than among middle class children. It appeared that children's preferences for their own sex roles had an important effect upon the formation of their self concepts, which influenced the development of FTP. Age differences were explained in terms of Piaget's 'formal operations' developing in early adolescence.

Paul Fraisse (1963), the doyen of scholars in the study of psychological time, explains that future temporal perspective (FTP) comes into being when "the future is not only experienced in the present action but can also be imagined. A true temporal experience may then take shape between the present wish and the goal to be reached (p. 172).... The future perspectives of an individual depend on his capacity for anticipating what is to come. This anticipation is a form of construction determined by the individual. It borrows from his past experience but is prompted by his present desires and fits into the framework of what he considers to belong to the realm of possibility" (p. 176). FTP, then, is a construction by the individual in terms of his past experiences and in terms of his expectations with respect to specific future events.

The primary purpose of this study was to explore *sex differences* in the FTPs of children. The influences of age, of social class and of intelligence were also investigated, as FTP was generally believed to be affected by them, although studies were either lacking in the areas of interest, or were inconclusive.

There were, in particular, three lines of study the results of which suggested sex differences in FTP. These pertained to a dimension of cognitive style known as *conceptual conservatism* (Wallach and Caron, 1959), to risk taking attributes (Swineford, 1941; Kass, 1964; Slovic, 1966; Van der Meer, 1966), and to the relationship reported to exist between short-time estimation and FTP (Siegman, 1961; Geiwitz, 1965).

Wallach and Caron (1959) visualized conceptual conservatism as being identical with *narrow category width* as defined by Pettigrew (1958). Females, they said, tended "to categorize more narrowly - that is, to be more conceptually conservative" than males. They found this dimension of cognitive style to be unrelated to intelligence. The studies cited earlier show that there are significant sex differences in *risk taking*, though there is some controversy about whether this holds true at the earlier ages. Boys are generally greater risk takers than girls,

and risk taking appears to be associated with wider FTP (Van der Meer, 1966). Siegman (1961) using male subjects, claimed to have established a relationship between FTP and short interval estimation. However, in a replication using both sexes, Geiwitz (1965) found sharp sex differences.

Evaluation of these studies appeared to justify the formulation of Hypothesis I as stating that *a difference would be found in the FTPs of boys and girls, boys tending to show wider FTPs than girls.*

Secondly, there appeared to be a general consensus among experimenters regarding the *developmental* nature of temporal perspective (Frank, 1939; Lewin, 1951; Inhelder and Piaget, 1958; Kuhlen, 1959; Fraisse, 1963; Freeman, 1964). Accordingly Hypothesis II was that *FTPs would be wider for boys and for girls at increasingly older age levels.*

Further aspects of the total study included investigation of the hypotheses (III) that there would be a difference in the FTPs of males and females at different socio-economic levels, middle-class children showing wider FTPs than working-class children; and (IV) that there would be a difference in the FTPs of boys and girls at different intellectual levels. (It was logical to assume that this difference would associate higher intellectual levels with wider FTPs, although the literature did not altogether support this assumption).

METHOD

The experimental design was factorial in nature with sex, class and IQ varied two ways and age three ways. One hundred and ninety two subjects (96 boys and 96 girls) participated in the study. More than twice the number of children required were selected for each grouping according to the qualifications of age, class and IQ, and then the required number were selected

for the study according to the results of a test of extraversion (Junior Eysenck Personality Inventory). The rationale here was that of control over extraneous variables, because the relationship of FTP to short interval estimation suggested that FTP would vary according to the degree of extraversion (Eysenck, 1959). Only subjects scoring above 15 on the extraversion scale of the inventory were included in the study. Control of a second extraneous variable, diurnal variability (Thor, 1962), was established by administration of the test between the hours of nine A.M. and noon.

Subjects

Subjects were selected from twenty six schools located in a major city in Nova Scotia. Three age groups were used: 9 years 6 months to 11.0 years, 12.0 to 13.6, and 15.0 to 17.0 years. Ss were chosen from two class levels (middle and working class) using the criteria suggested by Mayer (1955) and Roe (1959). Intellectual levels were established with the Henman Nelson group test, and two groups extracted: average (IQ 90 - IQ 110), and superior (IQ 120 and above).

Testing Device

The test used to measure FTP was an adaptation of the method devised by Cohen, Hansel and Sylvester (1953) to investigate time intervals pertaining to past events, for which time lines representing the S's life, or part of it, were employed. For the present study, time lines were adapted to represent future time periods of a day, a week, a month, a year, or a life-time. (Further details are given in Appendixes 1 and 2).

Of the future temporal intervals referred to by the various time lines, the approaching twenty-four hour period (represented by a Day Line) was the shortest interval and the easiest upon which to project oneself with temporal references, while a life-time (represented by a Life Line) was the most

difficult. It was decided that a group showing wide FTP with respect to a day, but not with respect to longer temporal units, would be considered as immersed in the present; whereas response to the Life Line would determine the width of a S's FTP, whether wide or narrow. Scores on the Month and Year Lines would serve primarily to strengthen the response, although these time lines would also be indicative of FTP for the temporal units they represented.

RESULTS

Analysis of the data consisted of the measurement of the influence of sex, age, social class and IQ upon FTP as indicated by the five time lines (the Day, the Week, the Month, the Year and the Life Lines) and by the Composite Score. As the design of the study was factorial, analysis of variance was used to test differences between individual means. As was expected, sex, age, class, and IQ affected FTP as measured by the different time lines in different ways, and required analyses beyond that of the total sample. These consisted of analyses of male, female, 10 year old, 12 year old, 16 year old, middle class, working class, superior IQ and average IQ group data.

A summary of the significance levels attained in the analyses of the total sample is given in Table 1 (Appendix 3).

SEX FACTOR. Table 2 (Appendix 3) presents the mean scores of responses of males and females. The differences between scores were found significant at the .01 level on the Month Line (male X = 65.42; female X = 62.19) and on the Year Line (male X = 60.79; female X = 56.84); they were found significant at the .001 level on the Life Line (male X = 56.34; female X = 49.72) and for the Composite Score (male X = 311.98; female X = 295.06). In each case male mean scores were higher than female mean scores.

The significant overall effect of sex on the time lines confirms the proposition contained in Hypothesis I that boys have wider FTPs than girls.

AGE FACTOR. The mean scores of responses for different age groups are presented in Table 3 (Appendix 3). Differences between means significant at the .001 level were found on the Month Line (age 10 X = 60.52; age 12 X = 64.69; age 16 X = 66.21), and at the .01 level on the Life Line (age 10 X = 50.86; age 12 X = 51.80; age 16 X = 56.42). The Tukey test indicated the Month Line mean score for 10 year olds to be significantly lower than the Month Line mean scores for 12 and 16 year olds, and the Life Line mean scores for 16 year olds to be significantly higher than the Life Line mean scores for 10 and 12 year olds.

This is interpreted to mean that 10 year olds can project themselves into the future with temporal references for time units of a day and a week as adequately as 12 and 16 year olds can, but that FTP for a time unit of a month does not develop until after age ten. FTP for a life span develops even later, being better developed at age 16 than at younger age levels.

This is considered confirmation of the proposition contained in Hypothesis II that older Ss have wider FTPs than younger Ss.

CLASS FACTOR. Middle class and working class mean scores for the total sample are presented in Table 4 (Appendix 3). A difference between means significant at the .05 level was found on the Day Line (middle class X = 59.24; working class X = 62.53), indicating that working class children have wider FTPs for the time unit of a day than middle class children. This is interpreted to mean that working class children are more immersed in the present than are middle class children. It has been said that members of the working class put all their energy into immediate needs, and that their temporal perspectives are limited to what can be attained without delay (Fraisse,

1966, p. 176). The present finding supports this theoretical assumption.

However, as significant differences between means were not found on other time lines, Hypothesis III concerning class differences was unsupported.

IQ FACTOR. The mean scores of responses of superior and average IQ Ss are presented in Table 5 (Appendix 3). A difference between means significant at the .05 level was found on the Week Line, indicating superior IQ Ss (X = 68.09) to have wider FTPs than average IQ Ss (X = 65.55). Intellectual ability thus appears to have some effect upon FTP, but the differences between the FTPs of superior and average IQ Ss which were expected were not evidenced, and Hypothesis IV was therefore not confirmed.

SEX BY AGE INTERACTION. Means for the interaction between sex and age are presented in Table 6 (Appendix 3). Sex was found to have a particularly differentiating effect upon FTP at the 10 year old level, males obtaining higher FTP scores and females lower FTP scores than males and females at older age levels on all time lines except that for Life. (Sex was found to be a significantly differentiating factor on the Life Line at all age levels, so no interaction between sex and age was evidenced for this time unit). Significant differences at the .01 level were obtained on the Day Line, the Week Line, the Month Line, and for the Composite Score; and at the .05 level on the Year Line.

DISCUSSION

The Influence of Sex upon Future Temporal Perspective

The most pronounced differentiating influence upon FTP was found to be sex, which significantly differentiated for time units of a month, a year, and a life span for the total

sample. The FTPs of males were wider than those of females for the life-span (and sometimes for other temporal units) among subjects with a working class background, among intellectually superior subjects, among intellectually average subjects, among ten year olds, among twelve year olds, and among sixteen year olds. The one exception to the significantly differentiating influence of sex upon FTP within groups was the middle class. This exception will be discussed in detail later.

Generally speaking, being female diminishes, and being male enhances the development of FTP. As FTP is dependent upon self-concept for its formation, this appears not at all unreasonable when one considers that males "are connotatively perceived to be more active, powerful and aggressive than women in all countries so far studied" (Kohlberg, 1966, p. 99). These universals are found in all children by age five or six. "Children agree earliest and most completely that fathers are bigger and stronger than mothers, next that they are smarter than mothers, and next that they have more social power or are the boss in the family", concludes Kohlberg, summarizing studies by Kagan and Lemkin (1960), and C. Smith (1966). He states that children's gender-role conceptions are based upon conventional stereotypes rather than upon reality factors (and so are excessively typed), as young children do not readily perceive the differences between arbitrary and essential gender-identity criteria.

Kohlberg's cognitive developmental theory of children's sex-role concepts and attitudes is singularly well suited to the interpretation of FTP, for the factors which control these concepts and attitudes also cause variation in FTP. Thus we find widest sex differences in FTP where sex typing is strongest, e.g., at young age levels, among average as compared with superior IQ children, and among working class rather than among middle class children.

Although the universals regarding males and females are accepted by both boys and girls, there is still preference by

girls for same-sex roles. Kohlberg says that "adult female stereotypes are positive enough to make femininity attractive to young girls even though adult females are perceived as less powerful and competent than males" (p. 121).

There is ample experimental evidence of the influence of same-sex typing in childhood. Brown (1967) found that by grade V, girls and boys both show preference for same-sex roles. Minuchin (1964) found that 85 percent of a group of ten year olds said their own sex was better, in reply to the question, "Is it better to be a boy or a girl?" Kohlberg obtained similar results using a small sample of children of five to seven, and he refers to a study done by Hartley, Hardesty and Gorfein (1962) in which similar results were obtained when children of eight to eleven were asked what sex child an unspecified husband or wife would prefer. S. Smith (1939) also reports preferential valueing of the same sex in nine to fourteen year olds.

Identification with one's own sex-role leads to perceptions of the self in terms of the universals attributing superior prestige, power and competence to males. It also leads to different methods of attaining competence; young boys learn to direct their competence strivings toward instrumental success, toward power and achievement values, and young girls direct theirs toward interpersonal and social values, nurturance, and aesthetic appreciation. FTP, the ability to project oneself into the future with temporal references and temporal orientation, differs accordingly.

Sex was found to differentially influence the FTPs of subjects within separate groups making up the total sample to different degrees, and this reflects variations in the universal development of sex role concepts due to differences in age, experiences effecting development of sex-role concepts, and intelligence.

As mentioned earlier, sex was stronger in its differentiating influence upon FTP at age ten than at older age

levels. At this age level it differentiated FTP for time units of a week, a month, a year and a life span, for the influences of same-sex typing are stronger at age ten than at older ages. Past ten, sex had a differentiating influence upon FTP for the major temporal unit, the life span, only.

Sex loses some of its differentiating influence upon FTP with age because of a widening of sex-typed interests which begins during the pre-pubertal years. Age-development trends in childhood are toward same-sex typing, whereas those in adolescence lead toward a broadening of heterosexual interests to include interest in the activities of the opposite sex, as studies by Terman and Miles (1936) and Gough (1949) have shown (Kohlberg, 1966). With this widening of sex-typed interests, the influence of prestige values and stereotypes associated with gender identity decreases and the FTPs of girls broaden for all temporal units except the life span. That prestige values and stereotypes do not altogether lose their influence is seen in the continuing significantly wider FTPs of males with respect to the life span, the aspect of uncertainty associated with adult specifics perhaps being the factor enabling the universals associated with masculinity and femininity to assert continuing influence.

Middle class and working class children differ from one another in the way sex differentiates between FTPs of the groups involved within the classes. Working class children showed wide sex differences in FTP, sex differentiating for temporal units of a month, a year and a life span. Middle class children on the other hand, showed no sex differences in FTP. This was very possibly due to the restriction in FTPs experienced by sixteen year old males as a result of anxiety associated with approaching examinations (this having some effect upon their distant futures), but until further testing can be done and the anxiety-producing variable controlled, this will not be known, and an alternative explanation will be offered.

Middle class children, it is believed, are exposed

earlier to experiences which foster the development of heterosexual interests. Perhaps most important, their parents, because of college education and middle class work experiences, both of which are known to widen sex-typed interests, serve as identification models soon after masculine-feminine values are acquired, and they are thus exposed early to wider social concepts. Working class children are not so exposed at such an early age.

Closely related are the different attitudes toward female sex roles held by middle and working class parents. Middle class parents attempt to orient their daughters as well as their sons toward remote goals of academic and life achievement, while working class parents are more accepting of the traditional female roles for their daughters. Hartley (1961) and Komarovsky (1962) both found middle and/or college trained females less satisfied with domestic roles than working class adult females. Hartley (1964) found significant class-based differences in sex role definition among 5 to 11 year old females, middle class children rejecting the work roles of working class children, attitudes which had much in common with those of their adult counterparts.

As self concepts are influenced in an important way by sex-role concepts and attitudes, and as FTP is formulated in part by self concepts, it follows that the FTPs of middle class females, in particular, are influenced by their early exposure to heterosexual interests, perhaps sufficiently so to eradicate sex differences in FTP. This is an interesting finding, if true. Further research alone will determine whether it is.

Superior and average IQ children also differed from one another in the way in which sex differentiated between FTPs of the groups involved within the intellectual levels. Average IQ children showed wide sex differences in FTP, sex differentiating for temporal units of a week, a year and a life span. Superior IQ children showed differences in FTP for temporal units of a month and a life span, but not to the same degree. The significance level on the Life Line for average IQ children was .001,

but for superior IQ children, only .01.

Intellectual ability is known to influence sex concepts, for cognitive development involves conceptual reorganizations of social attitudes (Kohlberg and Zigler, 1966). Thus, superior IQ children begin earlier to develop wider sex-role interests than their average IQ opposites, and this affects female self concepts, and female FTPs, in particular.

The Influence of Age upon Future Temporal Perspective

When the total sample was considered as a group, differences significant at the .01 level showed a progressive increase with age in the FTP for the temporal unit of a life span, and at the .001 level for the temporal unit of a month. This was taken as confirmation of Hypothesis II concerning age differences.

Age differences in FTP are attributable to differences in cognitive adaptation associated with mental age level. Piaget's scheme of intellectual development indicates that from age seven to eleven "concrete operations" are developing; to quote Flavell (1963), "the concrete-operational child... is beginning to extend his thought, as Piaget phrases it (Inhelder and Piaget, 1958, p. 248) from the actual towards the potential."

This stage is followed by another during which the child develops a generalized orientation toward problem solving having the property of formal-operational thought, which constitutes a cognitive strategy of determining reality within the context of possibility. A fundamental reorientation towards cognitive problems occurs, and with it "the potentiality of imagining all that might be there - both the very obvious and the very subtle - and thereby of much better insuring the finding of all that is there" (Flavell, 1963, p. 205).

It is because the sixteen year old has developed formal operational thought that his FTP for the temporal unit of a

life-span is wider than that of younger children. To quote Klineberg (1967), "It is apparently not until the advent of 'formal operations' in early adolescence that the individual becomes able to bring the verbal elements which comprise his anticipations of the future under the constraint of logical thought, linking a required logical consequence to an assertion whose truth is merely a possibility."

There is, in addition to the changing patterns of cognitive adaptation, the possibility of affective development being influential in the widening of FTP during adolescence.

The Influence of IQ and Social Class upon FTP

The attempt to assess the effect of intellectual level on FTP was confounded by failure to control adequately for 'realizability', a factor shown by Klineberg (1967) to be an important determinant of FTP. This dimension is thought to have particular significance for middle class average IQ males. Good scholastic achievement and university attendance, upon which the futures of males, in particular, are dependent, were indicated to be early expectations of nearly all subjects (94 percent of ten year olds). These expectations are well suited to the student of superior intellectual ability, but are unlikely to be attained by most others. The middle class average IQ male does not readily adjust his expectations to his potential as he grows older, but he has some realization of the discrepancy between his goals and the attainability of these goals, and his FTP is affected. The middle class average IQ female is not affected in the same way as her male counterpart by discrepancy between educational goals and attainment possibilities, because her distant future is not so dependent as his upon instrumental competence.

To determine the effects of intelligence on FTP it would be necessary to control for 'realizability' by choosing Ss of similar goals. Similarly, as 'realizability' differs in

relation to IQ level, to determine the effects of class differences, it would be necessary to control for intelligence.

Summary

In summary, sex was found to be a fundamental ingredient in the formation of FTP, influencing it more basically than social class membership or intellectual level. Due to the labeling of self resulting from being reared as a member of one sex rather than of another, an irreversible cognitive categorization, one forms self concepts influenced by universally held opinions of masculinity and femininity which in turn are important in the formation of FTP.

The influence of these universals upon self concept and through it, upon FTP, lessens as one becomes older except for long temporal spans. One would expect that in a culture where women were identified more closely with so-called 'masculine' roles, they would decrease markedly, and in a society where sex roles were reversed, that FTP would be wider for girls than for boys. In this respect, study of FTP is suggested as a useful tool in cross-cultural research, and also in the assessment of social change.

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TEST ADMINISTRATION AND SCORING

The test was presented in test booklets containing fifty 10 inch long time lines, one to a page. The length of time represented by a line was specified on the page, and the word NOW was printed at the beginning of each line to provide orientation. Ss were asked to indicate a response to one of the questions listed in Appendix 2, upon an appropriate line, under which the question appeared in print. For example, in response to the first question, "How long does it *seem* until lunch?", the S indicated his response upon a line representing a day. In this way, a subjective response to each question, "How long does it *seem* until..." was obtained.

Before beginning items associated with Day Lines, Ss were asked to record the time of the day at the beginning of the first line, and, after responding to an item they were asked to record under their mark the time the specific event inquired about would occur, if it was not known to the examiner. Similarly, before items associated with Week Lines were begun, Ss were asked to record the day of the week and the time of the day at the beginning of the first line, and, after responding to an item, they were asked to record under their mark the day and the time of day the specific event would occur, if unknown to the examiner. Before administration of items associated with Month Lines, Ss were asked to record the date at the beginning of the first line, and, if unknown to the examiner, they were asked, after responding to an item, to record under their mark the date the event referred to would occur. Before items associated with Year Lines were administered Ss were asked to record the date at the beginning of the first line, and if it were required, they were asked to record the date of the event referred to under their mark. Before administering the items associated with Life Lines, each S was asked to record his age at the beginning of the first line and the age he expected to attain at the end of the line; thus the lines

represented different time units for each S according to his individual response. After recording a response, Ss were asked to record under their mark, the age they expected to have reached when the event referred to would occur.

Questions were presented in random order within specified time periods. That is, all questions relating to one specific period, randomly arranged, were presented before going on to another specific period. Time periods were also presented in random order. Each period was separated from adjoining periods by blank pages, in order to offset 'kappa' and 'tau' effects (in this context, the influence of one's response to a set of lines representing a specific temporal unit upon one's response to a second set of lines representing a temporal unit differing in length). Before turning a blank page, an elaboration of the time unit involved as background for the following set of questions was undertaken. There were three booklets for each S, and in each of the three booklets there were different random orders of time units, and of individual items within them.

Many of the questions constituting test items were identical with or similar to questions used by Wallace and other experimenters for the method of future opinion devised by Wallace. Familiar events were chosen for test items, as it was essential that Ss be familiar with the time of occurrence of events before making subjective judgments concerning them. When there was doubt about Ss' familiarity with events, they were questioned, and if necessary, given information. For instance, they were asked if they knew when Dominion Day occurred before being given the item, "How long does it *seem* until Dominion Day?", and told if they did not know.

As it was essential also that Ss make subjective rather than objective judgments, the difference between the two types of judgments was pointed out before testing commenced, and Ss were asked to refrain from using objective cues in making their judgments. They were told:

"In this study you will have lines representing varying lengths of time. You are to mark each line with a perpendicular line to indicate how long it *seems* until an event I will ask you about will occur.

"It is important that you indicate how long it *seems* until the event will occur, rather than how long it actually *is* until then."

(Demonstration on chalkboard): "Suppose your line represents a day and you are asked how long it *seems* until lunch. It will seem longer for some people than for others, and the perpendicular lines will vary accordingly. Now all sorts of things influence apparent time, and I want to find out about them.

"Please remember, then, to mark how long it *seems* until an event will occur rather than how long it actually *is* until then."

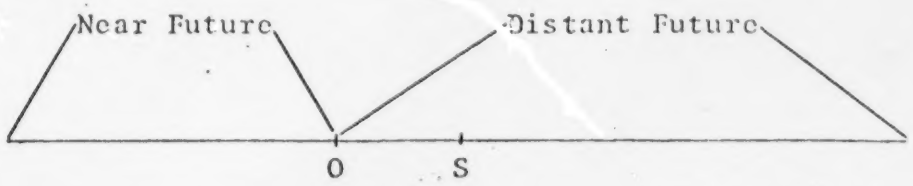
The test was administered to Ss in groups of sixteen or less on three separate occasions separated in time by periods of not less than two weeks. Care was taken to see that each testing period for each S fell on a different day of the week, and a different time of the morning.

Scoring Procedure

The scoring procedure was developed over a period of time, and was based on the definition of perspective as "the relation - especially the proportion - in which the parts of a subject are viewed by the mind" (Partridge, 1947).

It was assumed that FTP, as one type of perspective, could be divided into parts, which when reduced to a minimum, would be two in number, these being a 'near' future and a 'distant' future. The 'near future' was conceived as the more detailed, controllable part of time perspective, and the more one's thinking, with reference to future events, fell within this area, the less perspective one was assumed to show. For perspective implies an ability to see things within the future without distorting that future by bringing it nearer to the present.

For the purpose of this study, the time from the present, indicated by the beginning of the time line, delineated NOW, up to the occurrence of a designated event as measured objectively, was referred to, arbitrarily, as 'near future', and the time following this objectively designated event was referred to, arbitrarily, as 'distant future'.



Scale ½" = 1"

The objective measurement was obtained by dividing a ten inch guide into a suitable number of units and locating an event on a line accordingly. The guide for a day line, for instance, was divided into 96 quarter-hour units, so that lunch at 12:30 could be easily located on the line by calculating the number of quarter-hour units which would elapse from the time at which the question was asked until 12:30. And in like fashion for other events. A guide for a week was divided into 336 half hour units. A guide for a month was divided into 248 three hour units (or 240 three hour units if the month contained 30 days). A guide for a year was divided into 365 day long units. Objective measurements for Life Lines were calculated individually, as the line represented varying lengths according to the age of a S and his life expectancy.

When the subjective measurement (S) made by subject exceeded the objective measurement (O), the subject was said to have a narrow FTP, for he visualized less of the distant future as comprising that part of the future than objective measurement indicated should be there. In effect, he could not extend his thinking into the future without bringing that future closer to him. Conversely, when the subjective measurement fell short of the objective measurement, the subject was said to have a wide FTP, for he visualized more of the distant future as

comprising that part of the future than objective measurement indicated should be there. He could think of and refer to future events while allowing them to remain distant in time. He had no need to bring them into the 'near future'.

The score in either case was the difference between the objective and the subjective measurements. Whenever the subjective indication of the occurrence of a particular event exceeded the objective indication of the event's occurrence, the score was given a minus value. And whenever the subjective indication of the occurrence of the event in question fell short of the objective measurement, the score was given a plus value.

All time lines were exactly ten inches long. For scoring purposes, the lines were divided into units of 100, each unit 1/10 of an inch in length, so that a score of -11 meant that a deviation of 11/100 in a minus direction had occurred. This method of scoring had the advantage of making possible a comparison of individual scores one with another, and, by totalling all one hundred fifty deviation scores for a subject, it made possible a Composite Score. In order to eliminate negatives, a constant of 70 was added to all Line Scores and a constant of 350 to all Composite Scores.

FUTURE TEMPORAL PERSPECTIVE TEST ITEMS

DAY

1. How long does it seem until lunch?
2. How long does it seem until dinner?
3. How long does it seem until breakfast tomorrow morning?
4. How long does it seem until time for you to go to bed?
5. How long does it seem until _____ comes on?
   (An 8 o'clock TV show)
6. How long does it seem until school is out for the day?
7. How long does it seem until time for you to get up tomorrow morning?
8. How long does it seem until midnight?
9. How long does it seem until school starts tomorrow morning?
10. How long does it seem until school starts this afternoon?

WEEK

1. How long does it seem until school ends for the week?
2. How long does it seem until the weekend begins?
3. How long does it seem until _____ comes on?
   (TV program shown on Monday)
4. How long does it seem until the weekend ends?
5. How long does it seem until _____ comes on?
   (TV program shown on Thursday)
6. How long does it seem until school begins on Monday?
7. How long does it seem until this time tomorrow morning?
8. How long does it seem until next _____?
   (three days hence)
9. How long does it seem until your favourite TV program comes on?
10. How long does it seem until church time on Sunday?

MONTH

1. How long does it seem until _____ ends?
   (Month in which test is given)
2. How long does it seem until _____ begins?
   (following month)
3. How long does it seem until the middle of _____?
   (appropriate month)
4. How long does it seem until _____?
   (a holiday)
5. How long does it seem until a fortnight will have passed?
6. How long does it seem until you will have seen ____twice?
   (a TV program)
7. How long does it seem until _____ comes on?
   (TV program, 5 days hence)
8. How long does it seem until the next _____?
   (a school event - sports)
9. How long does it seem until next _____?
   (a week from day of testing)
10. How long does it seem until you _____?
    (an individual special event)

YEAR

1. How long does it seem until Christmas?
2. How long does it seem until your birthday?
3. How long does it seem until Hallowe'en?
4. How long does it seem until next Valentine's Day?
5. How long does it seem until the next summer vacation begins?
6. How long does it seem until Spring begins?
7. How long does it seem until New Year's Day?
8. How long does it seem until the summer vacation ends?
9. How long does it seem until Dominion Day?
10. How long does it seem until the last day of school?

LIFE

1. How long does it seem until you will graduate from school and are ready to go to work or to college?
2. How long does it seem until people will say you are old?
3. How long does it seem until you will be grown up?
4. How long does it seem until you will marry?
5. How long does it seem until you will have children?
6. How long does it seem until you will be middle aged?
7. How long does it seem until you will be a grandparent?
8. How long does it seem until you will own a house?
9. How long does it seem until you will have a car?
10. How long does it seem until your children will be grown up?

TABULATED DATA SUMMARIES

Table 1: Summary of significance levels attained on line scores by the total sample.

Table 2: Means and standard deviations of line scores for sex factor for total sample.

Table 3: Means and standard deviations of line scores for age factor for total sample.

Table 4: Means and standard deviations of line scores for IQ factor for total sample.

Table 5: Means and standard deviations of line scores for IQ factor for total sample.

Table 6: Means of sex and age interactions for line scores for total sample.

TABLE I

SUMMARY OF SIGNIFICANCE LEVELS ATTAINED ON LINE SCORES BY THE TOTAL SAMPLE

N=192

	Day	Week	Month	Year	Life	Composite
Sex			.01	.01	.001	.001
Age			.001	.05	.01	
Class	.05		.09		.06	
IQ		.05	.07		.09	
Sex x Age	.01	.01	.01	.05		.01
Sex x Class					.07	
Sex x IQ		.06				
Age x Class			.08	.01		.05
Age x IQ			.05			
Class x IQ						
Sex x Age x Class						
Sex x Age x IQ						
Sex x Class x IQ			.01	.05		.05
Age x Class x IQ		.05	.05			
Sex x Age x Class x IQ						

TABLE 2

MEANS AND STANDARD DEVIATIONS OF LINE SCORES FOR SEX FACTOR FOR TOTAL SAMPLE

N = 192

	Males		Females		
Time Lines	Mean	SD	Mean	SD	F
Day Line	61.78	1.06	59.99	0.88	1.63
Week Line	67.59	1.50	66.04	0.48	1.51
Month Line	65.42	0.03	62.19	0.16	7.61**
Year Line	60.79	0.92	56.84	0.56	9.33**
Life Line	56.34	0.03	49.72	0.10	19.54***
Composite	311.98	3.54	295.06	0.68	13.41***

** p < .01 *** p < .001

TABLE 3

MEANS AND STANDARD DEVIATIONS OF LINE SCORES FOR AGE FACTOR FOR TOTAL SAMPLE

N = 192

	Age Ten		Age Twelve		Age Sixteen		
Time Lines	Mean	SD	Mean	SD	Mean	SD	F
Day Line	62.39	1.51	61.08	0.02	59.19	0.97	1.77
Week Line	66.65	2.81	67.97	0.08	65.83	0.56	0.98
Month Line	60.53	3.80	64.69	0.31	66.21	0.30	8.44***
Year Line	58.38	2.42	60.99	0.30	56.08	0.72	3.16*
Life Line	50.86	2.32	51.80	0.01	56.42	0.51	5.26**
Composite	298.82	12.87	306.62	0.56	305.11	2.09	1.07

* p < .05 ** p < .01 *** p < .001

TABLE 4

MEANS AND STANDARD DEVIATIONS OF LINE SCORES FOR CLASS FACTOR FOR TOTAL SAMPLE

N = 192

Time Lines	Middle Class Mean	SD	Working Class Mean	SD	F
Day Line	59.34	2.57	62.53	1.13	5.53*
Week Line	66.25	0.11	67.38	0.62	0.81
Month Line	64.85	0.55	62.76	0.10	3.18
Year Line	59.32	1.16	58.32	0.71	0.59
Life Line	54.49	0.48	51.56	0.92	3.84
Composite	304.42	0.34	302.62	1.45	0.15

* $p < .05$

TABLE 5

MEANS AND STANDARD DEVIATIONS OF LINE SCORES FOR IQ FACTOR FOR TOTAL SAMPLE

N = 192

Time Lines	Superior IQ Mean	SD	Average IQ Mean	SD	F
Day Line	60.68	1.33	61.09	0.99	0.09
Week Line	68.09	0.58	65.55	0.43	4.06*
Month Line	64.91	0.17	62.71	0.11	3.54
Year Line	59.63	0.37	58.00	0.68	1.60
Life Line	54.32	0.49	51.73	0.90	2.99
Composite	307.32	1.59	299.72	1.16	2.70

* $p < .05$

TABLE 6

MEANS OF SEX AND AGE INTERACTIONS
FOR LINE SCORES FOR TOTAL SAMPLE

N = 192

		Age 10	Age 12	Age 16	F
Day Line	Males	66.10	59.39	59.84	5.00**
	Females	58.67	62.77	58.53	
Week Line	Males	70.50	67.15	65.12	5.99**
	Females	62.80	68.80	66.54	
Month Line	Males	64.90	64.79	66.57	5.58**
	Females	56.15	64.58	65.84	
Year Line	Males	62.72	60.93	58.73	3.93*
	Females	54.04	61.06	55.43	
Life Line	Males	55.20	54.49	59.32	0.48
	Females	46.52	49.11	53.52	
Composite	Males	319.43	306.93	309.58	7.18**
	Females	278.22	306.31	300.66	

* $p < .05$ ** $p < .01$